

CLAIMS

WHAT IS CLAIMED IS:

1. An abdominal exercise machine for exercising abdominal muscles, comprising
an upper member and a lower member, said upper member and said lower member
comprising generally extending members;
a semi-rigid member providing a range of bending force, said semi-rigid member coupled
to said upper member and said lower member;
whereby feedback is provided when a predetermined abdominal exercise is performed.

2. An abdominal exercise machine as set forth in claim 1, wherein
said generally extending members of said upper member separate by a range from 0-180
degrees;
said upper member further comprises an engagement member; and
said semi-rigid member coupled to said lower member by a pivoting joint.

3. An abdominal exercise machine as set forth in claim 2, wherein
said semi-rigid member securely coupled to said upper member; and
said semi-rigid member securely coupled to said pivoting joint.

4. An abdominal exercise machine as set forth in claim 2, wherein
said semi-rigid member detachably attachable to said upper member; and
said semi-rigid member detachably attachable to said pivoting joint.

5. An abdominal exercise machine as set forth in claim 1, wherein
2 said semi-rigid member coupled to said upper member by upper attachment means; and
said semi-rigid member coupled to said lower member by lower attachment means.
6. An abdominal exercise machine as set forth in claim 5, wherein
2 said generally extending members of said upper member are curved; and
said generally extending members of said lower member include padded rollers.
7. An abdominal exercise machine as set forth in claim 6, wherein
2 said semi-rigid member securely coupled to said upper attachment means and said lower attachment means.
8. An abdominal exercise machine as set forth in claim 6, wherein
2 said semi-rigid member detachably attachable to said upper attachment means and said lower attachment means.
9. An abdominal exercise machine as set forth in claim 5, wherein
2 said generally extending members of said upper member comprise rotatable handgrips.
10. An abdominal exercise machine as set forth in claim 9, wherein
2 said semi-rigid member securely coupled to said upper attachment means and said lower attachment means.

11. An abdominal exercise machine as set forth in claim 9, wherein
2 said semi-rigid member detachably attachable to said upper attachment means and said
lower attachment means.

12. An abdominal exercise machine as set forth in claim 5, wherein
2 said upper attachment means comprising a flex joint.

13. An abdominal exercise machine as set forth in claim 12, wherein
said semi-rigid member securely coupled to said upper attachment means and said lower
attachment means.

14. An abdominal exercise machine as set forth in claim 12, wherein
said semi-rigid member detachably attachable to said upper attachment means and said
lower attachment means.

15. An abdominal exercise machine as set forth in claim 5, wherein
2 said lower attachment means comprising a pivot joint providing a pivot motion along the
axis of said semi-rigid member.

16. An abdominal exercise machine as set forth in claim 15, wherein
2 said semi-rigid member coupled to said pivot joint by a flex joint and a plurality of bolts.

17. An abdominal exercise machine as set forth in claim 15, wherein

2 said semi-rigid member securely coupled to said upper attachment means and said lower attachment means.

18. An abdominal exercise machine as set forth in claim 15, wherein
2 said semi-rigid member detachably attachable to said upper attachment means and said lower attachment means.

19. An abdominal exercise machine as set forth in claim 5, wherein
 said lower attachment means comprising a pivot joint providing a combination of a pivot motion along the axis of said semi-rigid member and a rotational pivoting motion.

20. An abdominal exercise machine as set forth in claim 19, wherein
 said semi-rigid member coupled to said pivot joint by a flex joint and a plurality of bolts.

21. An abdominal exercise machine as set forth in claim 19, wherein
2 said semi-rigid member securely coupled to said upper attachment means and said lower attachment means.

22. An abdominal exercise machine as set forth in claim 19, wherein
2 said semi-rigid member detachably attachable to said upper attachment means and said lower attachment means.

23. An abdominal exercise machine as set forth in claim 5, wherein

2 said lower attachment means comprising a ball joint having a ball joint assembly, a ball
joint cover and an opening;

4 said semi-rigid member coupled to said ball joint via said opening of said ball joint
assembly; and

6 said ball joint allowing for a side to side as well as a front to back motion of said semi-
rigid member.

24. An abdominal exercise machine as set forth in claim 23, wherein

 said generally extending members of said upper member being substantially parallel to
said lower member.

25. An abdominal exercise machine as set forth in claim 23, wherein

 said semi-rigid member securely attachable to said upper attachment means and said
lower attachment means.

26. An abdominal exercise machine as set forth in claim 23, wherein

 said semi-rigid member detachably attachable to said upper attachment means and said
lower attachment means

27. An abdominal exercise machine for exercising abdominal muscles, comprising

 an upper member and a lower member, said upper member and said lower member
comprising generally extending members;

4 a plurality of semi-rigid members providing a range of bending force, said plurality of
semi-rigid members coupled to said upper member and said lower member;
6 whereby feedback is provided when a predetermined abdominal exercise is performed.

28. An abdominal exercise machine as set forth in claim 27, wherein
2 said generally extending members of said upper member are curved.

29. An abdominal exercise machine as set forth in claim 27, wherein
said semi-rigid member securely coupled to said upper attachment means and said lower
attachment means.

30. An abdominal exercise machine as set forth in claim 27, wherein
said semi-rigid member detachably attachable to said upper attachment means and said
lower attachment means.

31. An abdominal exercise machine comprising,
2 a top member;
a lower member;
4 said top member and said lower member comprising generally extending members;
a hinged-rigid member, said hinged-rigid member coupled to said lower member and said
6 top member;
an elastic member, said elastic member coupled to said hinged-rigid member;
8 whereby feedback is provided when a predetermined abdominal exercise is performed.

2 32. An abdominal exercise machine as set forth in claim 31, wherein
said top member having length adjustment means; and
said elastic member detachably attachable to said hinged-rigid member.

2 33. An abdominal exercise machine for exercising abdominal muscles, comprising:
means for engaging an upper body portion;
means for engaging a lower body portion; and
semi-rigid means for flexibly resisting compression, said semi-rigid means coupling said
upper body engaging means and said lower body engaging means, said semi-rigid means
spanning abdominal muscles for exercise thereof;
whereby abdominal muscles are exercised when said semi-rigid means undergoes
compression when said upper body portion is brought towards said lower body portion and
feedback is provided during a predetermined abdominal exercise.

2 34. An abdominal exercise machine for exercising abdominal muscles, comprising:
means for engaging an upper body portion;
means for engaging a lower body portion; and
biased elastic hinged-rigid means for resiliently resisting compression, said biased
hinged-rigid means coupling said upper body engaging means and said lower body engaging
means, said biased hinged-rigid means spanning abdominal muscles for exercise thereof;
elastic means for biasing said hinged-rigid means, said elastic means coupled to said
hinged-rigid means;

whereby abdominal muscles are exercised when said biased hinged-rigid means undergoes compression when said upper body portion is brought towards said lower body portion and feedback is provided during a predetermined abdominal exercise.

U.S. GOVERNMENT USE